



• Rayat Shikshan Sanstha's •
KARMAVEER BHAURAO PATIL COLLEGE, VASHI
(EMPOWERED AUTONOMOUS)



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RUSA Beneficiary Institute Under Component 8



Dr. Shrikant G. Jakkewad

Assistant Professor
Department of Mathematics



[Google Scholar](#)



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Basic Information

Qualification	M.Sc. (Mathematics), UGC-NET-JRF, CSIR-NET-JRF, SET, Ph.D.
Designation	Assistant Professor
Department	Mathematics
Specialization	Algebra, Analysis, Algebraic Graph Theory.
Teaching Experience	10 Years
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Research Publications

1. **Distance and Eccentricity Spectra of Compressed Zero-Divisor Graphs over $\prod_{k=1}^n F_k$,** where F_k are any fields and $2 \leq n \leq 5$.
Advanced Engineering Sciences (Scopus-indexed Journal).
2. **On the Graph-Theoretic Properties of Compressed Zero Divisor Graphs of Product Rings over $\prod_{k=1}^n \mathbb{Z}_{p_k}$.**
Asian Research Journal of Mathematics, Vol. 22, No. 2, pp. 150–165.
3. **Cosmological Analysis of a Simple $f(R)$ Modified Gravity Model.**
Advanced Engineering Sciences (Scopus-indexed Journal).
4. **Data Security by Transform Technique.**
Advanced Engineering Sciences (Scopus-indexed Journal).
5. **Spectral Properties and Energy Analysis of the Bishop Hypergraph on the 8×8 Chessboard.**
Journal of Advances in Mathematics and Computer Science, Vol. 41, No. 3, pp. 126–141.

6. **Spectral and Energy Analysis of the Queen Hypergraph Derived from the 8×8 Chess-board.**
Asian Research Journal of Mathematics, Vol. 22, No. 4, pp. 39–55.
7. **Spectral and Energy Analysis of the Rook Hypergraph Derived from the 8×8 Chess-board.**
Asian Research Journal of Mathematics, Vol. 22, No. 4, pp. 15–31.
8. **Spectral Analysis of Compressed Zero Divisor Graphs over $\prod_{k=1}^n \mathbb{Z}_{p_k}$, for $2 \leq n \leq 5$, where each p_k is a prime.**
Journal of Advances in Mathematics and Computer Science, Vol. 41, No. 3, pp. 91–109.
9. **A Generalized Study of Zero Divisor Graphs of Boolean Rings $\mathbb{Z}_2^n = \mathbb{Z}_2 \times \mathbb{Z}_2 \times \cdots \times \mathbb{Z}_2$.**
Communications on Applied Nonlinear Analysis, Vol. 32, No. 7, 2025.
10. **Structural Properties of Zero Divisor Graphs of $\mathbb{Z}_{rs}$, where r and s are primes with $r < s$: Analysis of Cartesian and Tensor Products with Application.**
Panamerican Mathematical Journal (Scopus-indexed Journal), Vol. 35, No. 2S, 2025.
11. **Spectral Analysis of the Adjacency Matrix and Hamiltonian Properties of Zero-Divisor Graphs $\Gamma(\mathbb{Z}_p \times \mathbb{Z}_p)$ and $\Gamma(\mathbb{Z}_p[i] \times \mathbb{Z}_p[i])$.**
Utilitas Mathematica (Scopus-indexed Journal).
12. **Structural Properties of Zero-Divisor Hypergraph and Super Hypergraph over $\mathbb{Z}_n$: Girth and Helly Property.**
Panamerican Mathematical Journal (Scopus-indexed Journal), Vol. 35, No. 4S, Article 485, 2025.
13. **Harnessing Statistical Models for Enhanced Crop Production Forecasting.**
International Journal of Advance and Applied Research, Vol. 6, No. 19, 2025.
14. **Partial Metric Space with Modulation of Fixed-Point Theorems in Generalized Contraction Mapping.**
Webology, Vol. 19, No. 2, 2022.
15. **Some Properties of Graph of a Finite Group.**
IOSR Journal of Mathematics, Vol. 10, Issue 6, Nov.–Dec. 2014.

Major / Minor Research Projects

1. Completed Minor Research Project (RUSA), Academic Year 2024–25

Title: *Study of Some Zero Divisor Graphs of Boolean Rings and its Generalizations*

Funding Agency: RUSA

Project Status: Completed

Sanctioned Amount: 40,000

2. Completed Minor Research Project (Institutional Seed Money), Academic Year 2025–26

Title: *A Graph-Theoretic and Matrix Properties of Compressed Zero Divisor Graphs of Commutative Rings*

Funding Agency: Institutional Seed Money

Project Status: Completed

Sanctioned Amount: 75,000

3. Ongoing Minor Research Project (Institutional Seed Money), Academic Year 2025–26

Title: *Graph-Theoretic and Structural Topology Analysis of the Mumbai Suburban Local Railway Network*

Funding Agency: Institutional Seed Money

Project Status: Ongoing

Papers Presented at International / National Conferences

1. Spectral Analysis of Distance and Eccentricity Matrices of Compressed Zero-Divisor Graphs Associated with Product Rings $\prod_{k=1}^n \mathbb{Z}_{p_k}[i]$.

Presented at the *National Conference on Interdisciplinary Scientific Research (Sci Fusion 2026)*, organized by KLE Society's Science and Commerce College, Kalamboli, Navi Mumbai, held during **13–14 March 2026**.

2. Mathematical Analysis for Harmonium Sound and Stability.

Presented at the *One Day National Multidisciplinary Web Conference on Modern India 2047: A Multidisciplinary Roadmap Towards Viksit Bharat*, organized by Gokhale Education Society's Dr. T. K. Tope Arts & Commerce Night College, Parel, Mumbai, held on **21 February 2026**.

3. On the Graph-Theoretic Properties of Compressed Zero-Divisor Graphs of Product Rings over $\mathbb{Z}_{p_k}$.

Presented at the *International Conference on Astrophysics, Gravitation and Cosmology (ICAGC-2026)*, organized by the School of Mathematical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, held during **13–14 February 2026**.

4. On the Graph-Theoretic Properties of Compressed Zero-Divisor Graphs of Product Rings over $\mathbb{Z}_{p_k}$.

Presented at the *International Conference on Analysis, Discrete Mathematics and Applications (ICADMA-2025)*, jointly organized by NACS College, SPPU, IMS, and NMAA, held during **11–13 November 2025**.

5. Spectral Analysis of Compressed Zero-Divisor Graphs over $\prod_{k=1}^n \mathbb{Z}_{p_k}[i]$.

Presented at the *International Conference on Mathematics and Statistics (ICMS-2025)*, organized by the Postgraduate Department of Mathematics, St. Dominic's College, Kanjirapally, in association with KSHEC, KMA, and KSA, held during **30–31 October 2025**.

- 6. Structural Properties of Zero Divisor Graphs of $\mathbb{Z}_{rs}$, where $r < s$: Analysis of Cartesian and Tensor Products with Applications.**

Presented at the *Two-Day Multidisciplinary International Conference on “Transformation of Indian Economy in the Global Context: Artificial Intelligence, Innovations & Sustainable Development (TIEGC-2025)”*, jointly organized by Yeshwant Mahavidyalaya, Nanded, and Swami Ramanand Teerth Marathwada University, Nanded, held during **13–14 October 2025**.

- 7. Poster Presentation: Zero-Divisor Graphs of Boolean Rings.**

Presented at the *Two-Day National Conference on Recent Mathematical Innovation and Skill in the 21st Century*, organized by the Department of Mathematics, Sant Gadge Baba Amravati University, held on **27 March 2021**.

- 8. Some Properties of Graph of a Finite Group.**

Presented at the *Three-Day International Conference on Gravitation, Cosmology, and Mathematical Physics (ICGCAMP-19)*, organized by the Department of Mathematics and Physics, GLA University, Mathura, in collaboration with The Tensor Society, India, held during **04–07 April 2019**.

- 9. Graph of a Finite Group.**

Presented at the *Two-Day National Conference on Recent Trends in Science and Technology (RAISAT-2019)*, organized by Gopikabai Sitaram Gawande Mahavidyalaya, Umarched, District Yavatmal, held during **05–06 March 2019**.

- 10. Some Properties of a Graph of Finite Group.**

Presented at the *National e-Conference on Recent Trends in Science and Technology (RAISAT-2019)*, organized by Gopikabai Sitaram Gawande Mahavidyalaya, Umarched, District Yavatmal, held during **05–06 March 2019**.

Courses / Training Programs Completed

- 1. Short-Term Programme (Online) on Research Methodology and Digital Tools (AI & Cyber Security)**

Organized by M.D. (Online), held from **18 May 2026 to 23 May 2026**. Successfully completed with **Grade A+**.

- 2. Faculty Induction Program (Online) under Malaviya Mission Teacher Training Program (MM-TTP)**

Organized by the *Malaviya Mission Teacher Training Centre (MMTTC)*, Utkal University, Bhubaneswar, under the aegis of the University Grants Commission (UGC), from **19 January 2026 to 15 February 2026**. Successfully completed with **Grade A+**.

- 3. Refresher Course: “Mathematics and Its Applications”**

Organized by the *Department of Mathematics, Assam University, Silchar*, under the aegis of the *Malaviya Mission Teacher Training Centre (MMTTC)*, Assam University, held from **29 December 2025 to 12 January 2026**. Successfully completed with **Grade A+**.

4. NEP 2020 Orientation & Sensitization Program

Conducted under the *Malaviya Mission Teacher Training Program (MM-TTP)* of the University Grants Commission (UGC), organized by *UGC-MMTTC, Mizoram University*, held from **1 August 2024 to 9 August 2024**.

5. One Month Online National Faculty Induction / Orientation Program

Organized by the *Guru Angad Dev Teaching Learning Centre*, under the *Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching*, Ministry of Education, Government of India, held from **08 November 2021 to 07 December 2021**.

6. NPTEL–AICTE Approved Online Course: Basic Linear Algebra

Successfully completed the *8-week online course* offered through *SWAYAM* under the NPTEL–AICTE initiative.

Guest Lectures / Invited Talks Delivered

1. Applications of Mathematics in Engineering

Delivered a guest lecture titled “*Applications of Mathematics in Engineering*” at **Dr. D. Y. Patil Pratishthan’s D. Y. Patil College of Engineering** on **27 December 2025**.

Paper Setter / Examination Duties

1. Appointed as a **Paper Setter** at **Chetana’s Hazarimal Somani College of Commerce & Economics, Bandra (East)**, for the academic year **2025–26**.

2. Served as a **Practical Examiner** for *[Course/Subject]* at **Birla College, Kalyan**, during the academic year **2024**.

3. Served as a **Practical Examiner** for *[Course/Subject]* at **Birla College, Kalyan**, during the academic year **2025**.

Memberships / Affiliations

1. **Chairman**, Special Cell Committee, Karmaveer Bhaurao Patil College, Vashi (Empowered Autonomous).

2. **Chairman**, Gymkhana Committee, Karmaveer Bhaurao Patil College, Vashi (Empowered Autonomous).

3. **Member**, Board of Studies in Mathematics, Karmaveer Bhaurao Patil College, Vashi (Empowered Autonomous).